

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-132747

(43)Date of publication of application : 21.05.1999

(51)Int.Cl. G01B 11/28
G01B 11/30

(21)Application number : 09-302190 (71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 04.11.1997 (72)Inventor : MIURA MASAO

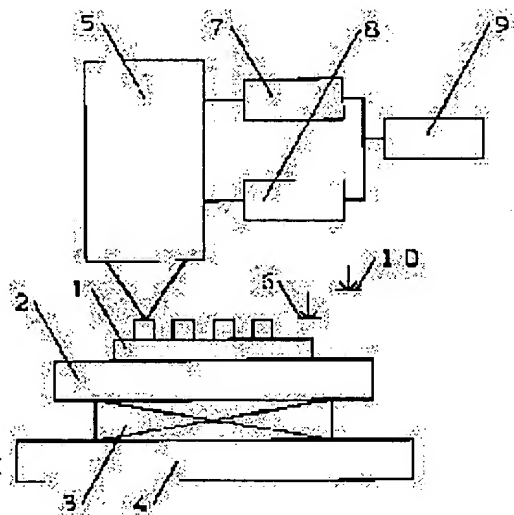
(54) DEFECT/FOREIGN MATTER INSPECTING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To dispense with re-observation by a person by providing a height direction variable mechanism on an inspection object mount stage, and conducting a defect/foreign matter three-dimensional inspection.

SOLUTION: An object to be inspected 1 is mounted on an inspection object mount stage 2 fixed to an X-Y stage moving mechanism 4 with a height variable stage fixing tool 3 movably in the X-Y-Z directions.

The focal point of an optical unit 5 is matched with a focal position 6 on the surface of the inspection object 1, the image of the object to be inspected 1 is stored in a memory image unit 7 by the cyclic pattern distance, the image is fed to an actual image unit 8 by the next cyclic pattern distance of the object 1, and both images are compared by a comparing unit 9. When a difference is found, it is reported as a defect or a foreign matter. After all regions of the object 1 are inspected, the inspection is again repeated from the start at the focal position changed with height by the optional distance from the surface focal position 6 by the height variable stage fixing tool 3, and the inspection is completed when all regions of the object to be inspected 1 are inspected.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2000 Japanese Patent Office

JP11132747
SEIKO EPSON CORP
Inventor(s): MIURA MASAO
Application No. 09302190 , Filed 19971104 , Published 19990521

Abstract:

PROBLEM TO BE SOLVED: To dispense with re-observation by a person by providing a height direction variable mechanism on an inspection object mount stage, and conducting a defect/foreign matter three-dimensional inspection.

SOLUTION: An object to be inspected 1 is mounted on an inspection object mount stage 2 fixed to an X-Y stage moving mechanism 4 with a height variable stage fixing tool 3 movably in the X-Y-Z directions. The focal point of an optical unit 5 is matched with a focal position 6 on the surface of the inspection object 1, the image of the object to be inspected 1 is stored in a memory image unit 7 by the cyclic pattern distance, the image is fed to an actual image unit 8 by the next cyclic pattern distance of the object 1, and both images are compared by a comparing unit 9. When a difference is found, it is reported as a defect or a foreign matter. After all regions of the object 1 are inspected, the inspection is again repeated from the start at the focal position changed with height by the optional distance from the surface focal position 6 by the height variable stage fixing tool 3, and the inspection is completed when all regions of the object to be inspected 1 are inspected.

Int'l Class: G01B01128 G01B01130

MicroPatent Reference Number: 000474113
COPYRIGHT: (C) 1999 JPO

拒絶理由通知書

特許出願の番号 平成11年 特許願 第132747号
起案日 平成12年 3月 6日
特許庁審査官 瀧本 十良三 9606 2P00
特許出願人代理人 木村 勝彦 (外 1名) 様
適用条文 第29条第2項

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から60日以内に意見書を提出して下さい。

理 由

本願の下記の請求項に係る発明は、下記引用例に記載された発明に基づいて、当業者が容易に発明をすることができたものであるから、特許法第29条第2項の規定により特許を受けることができない。

記

- ・請求項 1～19
- ・引用例 1. 特開平10-119314号公報
2. 特開平10-58696号公報

・備考

1. 請求項1～3, 7, 10～12, 19に係る発明について

上記引用例1には、複数の液体収容部を有するインクタンクであって、フィルタ62の中心、インクタンク供給口の中心およびBkインク供給口33の中心がそれぞれずれており、各中心間のオフセット量を結合部材51により修正することにより、液体吐出ヘッド側の供給口と液体タンク側の供給口の孔の径や位置を異なるように設計でき、設計の自由度を大きくできるインクタンクが記載されて

続葉有

続 葉

いる（第10頁左欄第5行～第23行及び【図9】参照）。そして、該結合部材51を液体タンク側と一体化してもよいことが記載されている（第10頁右欄第29行～第32行参照）。

また、引用例1におけるインク供給路は、【図9】の記載からみて、軸心を異にする複数の凹部から構成されているものと認められる。

更に、液体吐出ヘッドユニットに向けて突出する位置決め用突起26が設けることが記載されている（第7頁右欄第21行～第23行参照）。

2. 請求項4～6, 13, 16～18に係る発明について

上記引用例2には、外周を短冊型の共通の枠12により囲われた上、それぞれリブ11によって枠12に結合されたインク供給口10a～eを有し、該インク供給口10a～eは記録ヘッド側のインク供給針の間隔に合わせて配置されているインクカートリッジが記載されており（第3頁左欄第6行～第30行参照）、引用例2に記載されたインクカートリッジに対して、設計上の自由度を高めるために引用例1に記載された技術を適用して、本願の請求項4～6, 13, 16～18に係る発明のように構成することは、当業者が容易に想到し得ることであり、また、その効果も当業者が予測し得る程度のものである。

3. 請求項8, 9, 14, 15に係る発明について

「インク供給口とインク収容室とのずれが大きな領域では、前記インク収容室のインク流出口に隣接する前記凹部がずれ方向を長軸とする断面長円形に形成され」る点、「通孔を、上型と下型との突当てにより成形」する点、「インク流出口が前記インク収容室の幅方向のほぼ中心線に位置して形成される」点、「各インク収容室の直近に位置する通孔が、前記インク収容室の幅方向の中心線に位置して形成され」る点は、引用例1に記載された発明において、いずれも技術の具体的適用に伴う設計変更として当業者が適宜選択行い得ることであり、また、それによる効果も格別のものとは認められない。

この拒絶理由通知書中で指摘した請求項以外の請求項に係る発明については、現時点では、拒絶の理由を発見しない。拒絶の理由が新たに発見された場合には拒絶の理由が通知される。

この拒絶理由通知の内容に関するお問い合わせ、または面接のご希望がございましたら下記までご連絡下さい。

審査第二部印刷・プリンタ 桐畑 幸廣

TEL 03(3581)1101 内線3259～3261

続葉有

続 葉

FAX 03(3580)6902

先行技術文献調査結果の記録

・調査した分野 I P C 第 7 版 B 4 1 J 2 / 1 7 5

この先行技術文献調査結果の記録は、拒絶理由を構成するものではない。

Reference No. J0074194

Mailing No. 071470

Mailing Date March 15, 2000

Notice of Reason for Rejection

Number of Patent Application: JP-A-11-132747

Drafting Date of the Action: March 6, 2000

Examiner of the Patent Office: TAKIMOTO, Torazo 9604 2P00

Agent for Applicant: Mr. KIMURA, Katsuhiko (Other One)

Applied Provision of the Statute: Clause 2 of Article 29

The present application should be rejected for reason under mentioned. In case of any opinions, a response may be filed within sixty (60) days from the mailing date of this Action.

Reasons

The invention of the application defined in the following claims could be easily made by those ordinarily skilled in the art on basis of an invention or inventions referred to in the under mentioned publications. Thus, a patent could not be effected on the application under Clause 2 of Article 29 of the Japanese Patent Laws.

Remark

Claims 1 to 19

Citations: 1. JP-A-10-119314

2. JP-A-10- 58696

Remark

1. As to the inventions of claims 1 to 3, 7, 10 to 12 and 19

The cited reference 1 describes an ink tank having a plurality of liquid supporters, in which the center of a filter 62, the center of an ink tank supplier and the center of a Bk ink supplier 33 are off respectively, and the off-setting amounts between the respective centers are corrected by a combining member 51, whereby the supplying mouth of a liquid discharging head side as well as the diameter and position of the hole of the supplying mouth of a liquid tank side are designed to enable to vary them, and the degree of freedom of the design may be large (see lines 5 to 23 of left column at page 10, and [Fig. 9]). It is described that the combining member 51 may be united with the liquid tank side (see lines 29 to 32 of right column at page 10).

The ink supply path of the cited reference 1 is recognized, from the description of [Fig. 9], to be composed of plural concave parts which differ axial centers.

Further, it is described to provide a positioning projection 26 projecting toward the liquid discharge head unit (see lines 21 to 23 of right column at page 7).

2. As to the inventions of claims 4 to 6, 13 and 16 to 18

The cited reference 2 describes an ink cartridge which has ink supplying mouths 10a to 10e encircled at the outer circumference with a common frame 12 of rectangular shape and combined to the frame 12 with ribs 11, said ink supplying mouths 10a to 10e being disposed in correspondence to spaces of ink supplying needles at a recording head side (see lines 6 to 30 of left column at page 3). It is easily suggested to those skilled that the art of the citation 1 is applied to the ink cartridge of the citation 2 for heightening the degree of freedom of the design as the inventions of claims 4 to 6, 13, and 16 to 18, and effects thereby are to an extent that those skilled could be easily hinted.

3. As to the inventions of claims 8, 9, 14 and 15

The point of "at the range where the ink supply mouth and the ink supporting chamber are largely deviated, said concave adjacent to the ink discharging mouth of said ink supporting chamber is formed to be oblong in cross section with the deviating direction being a longer axis", the point of "the passing hole is formed by butting an upper and a lower molds", the point of "the ink discharging mouth is formed at the near center line in the width direction of the ink supporting chamber", and the point of "the passing holes positioned nearly

the respective ink supporting chambers are formed at the center line in said width direction of the ink supporting chamber", may be each appropriately selected or carried out by those skilled in the art as the designing alternations in company with the technical and specific applications, and the effects thereby could not be recognized as especial.

With respect to an invention or inventions in other claim or claims than claims pointed out by this Action, a rejecting reason is not found. If a new rejecting reason is found, it shall be notified to applicant.

If you wish to inquire about the rejecting reason, or you wish personal interview with the Examiner, please contact the following communication of the Examination Section.
The Examination 2nd Section of the Japanese Patent Office,
Print and Printers: the examiner, KIRIHATA, Yukihiro
Tel; 03(3581) 1101 ex. 3259 to 3261

Record of searching for prior art technical reference

Searched Field IPC 7th Edition B41J 2/175

This record of searching for prior art technical

reference does not constitute any rejecting reason.

- For more records, click the Records link at page end.
- To change the format of selected records, select format and click **Display Selected**.
- To print/save clean copies of selected records from browser click **Print/Save Selected**.
- To have records sent as hardcopy or via email, click **Send Results**.

2
Rochoco

Format

☒ Select All

☒ Clear Selections

Print/Save Selected

Send Results

Display Selected

Full

1. 3/19/1

012554694 **Image available**

WPI Acc No: 1999-360800/199931

XRPX Acc No: N99-268838

Defect and foreign material inspection apparatus for semiconductor device fabrication - has stage fixing tool with variable height provided for tested target object mounting stage to enable three-dimensional defect and foreign material test

Patent Assignee: SEIKO EPSON CORP (SHIH)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11132747	A	19990521	JP 97302190	A	19971104	199931 B

Priority Applications (No Type Date): JP 97302190 A 19971104

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 11132747	A		7	G01B-011/28	

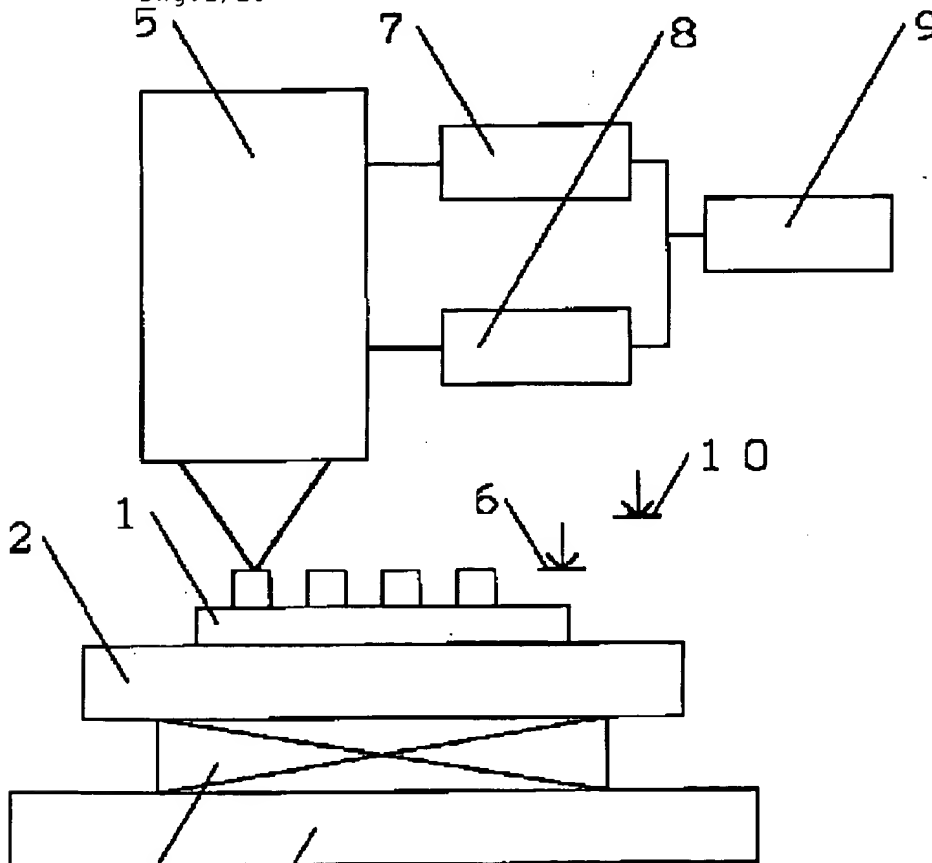
Abstract (Basic): JP 11132747 A

NOVELTY - The tested target object mounting stage (2) is provided with a stage fixing tool (3) with a variable height to enable three-dimensional defect and foreign material test.

USE - For semiconductor device fabrication.

ADVANTAGE - Allows three-dimensional defect and foreign material test. Doubles the inspection speed. **DESCRIPTION OF DRAWING(S)** - The figure shows a structural drawing of the defect and foreign material inspection apparatus. (2) Tested target object mounting stage; (3) Stage fixing tool.

Dwg.1/10



Title Terms: DEFECT; FOREIGN; MATERIAL; INSPECT; APPARATUS; SEMICONDUCTOR;
DEVICE; FABRICATE; STAGE; FIX; TOOL; VARIABLE; HEIGHT; TEST; TARGET;
OBJECT; MOUNT; STAGE; ENABLE; THREE-DIMENSIONAL; DEFECT; FOREIGN;
MATERIAL; TEST
Derwent Class: S02
International Patent Class (Main): G01B-011/28
International Patent Class (Additional): G01B-011/30
File Segment: EPI
Manual Codes (EPI/S-X): S02-A03B5

DERWENT WPI (Dialog® File 351): (c) 2000 Derwent Info Ltd. All rights reserved.

			Format	
<input checked="" type="checkbox"/> Select All			Display Selected	Full 
<input checked="" type="checkbox"/> Clear Selections	Print/Save Selected	Send Results		

© 2000 The Dialog Corporation plc